

USSN 10/699,289

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**In the Specification**

Substitute paragraphs for the Specification are set forth below:

[0009] The invention provides in a first aspect a band-pass filter characterized by a center frequency. The band-pass filter has a stacked pair of film bulk acoustic resonators (FBARs) and an acoustic decoupler between the FBARs. Each of the FBARs has opposed planar electrodes and a layer of piezoelectric material between the electrodes. The acoustic decoupler has a single layer of acoustic decoupling material having a nominal thickness equal to an odd integral multiple of one quarter of the wavelength in the acoustic decoupling material of an acoustic wave having a frequency equal to the center frequency. The acoustic decoupling material comprises plastic. The acoustic decoupler controls the coupling of acoustic energy between the FBARs. Specifically, the acoustic decoupler couples less acoustic energy between the FBARs than would be coupled by direct contact between the FBARs as in the exemplary SBAR shown in Figure 3. The reduced acoustic coupling gives the band-pass filter such desirable properties as a low insertion loss and flat frequency response in its pass band, a pass bandwidth in the range from about 3% to about 5% of the center frequency and good out-of-band rejection.

[0010] In one embodiment, the acoustic decoupling material has an acoustic impedance less than that of the other materials of the FBARs.

[0011] In another aspect, the invention provides a band-pass filter characterized by a center frequency. The band-pass filter has a stacked pair of film bulk acoustic resonators (FBARs) and a single layer of acoustic decoupling material between the FBARs. Each of the FBARs has opposed planar electrodes and a layer of piezoelectric material between the electrodes. The layer of acoustic decoupling material has a nominal thickness equal to an odd integral multiple of one quarter of the wavelength in the acoustic decoupling material of an acoustic wave having a frequency equal to the center frequency. The acoustic decoupling material has comprises plastic having an acoustic impedance less than the acoustic impedance of the piezoelectric material.

[0012] In another aspect, the invention provides an electrical filtering method. In the method, a pair of film bulk acoustic resonators (FBARs) is provided. An input electrical

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40 signal is applied to one of the FBARs. Acoustic energy is coupled between the FBARs by no more than one layer of acoustic decoupling material located between the FBARs. The acoustic decoupling material comprises plastic. The acoustic energy coupled is less than would be coupled by direct contact between the FBARs. A filtered output electrical signal is output from the other of the FBARs.